DOCUMENT RESUME

ED 406 429 TM 026 386

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TITLE Self-Esteem, Locus of Control, and Student Achievement.
PUB DATE Nov 96
NOTE 12p.; Paper presented at the Annual Meeting of the Mid-South Educational Research Association (Tuscaloosa, AL, November 1996).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Achievement; Correlation; Databases; Definitions; High Schools; *High School Students; *Locus of Control; National Surveys; Scores; *Self Esteem; Socioeconomic Status; Standardized Tests; *Student Attitudes; Test Results

ABSTRACT

The direct effects of locus of control and self-esteem on standardized test scores were studied. The relationships among the standardized test scores and measures of locus of control and self-esteem for 12,260 students from the National Education Longitudinal Study 1994 database were examined, using the same definition of locus of control and self-concept (self-esteem) as used in the 1972 National Longitudinal Study, the High School and Beyond, and the National Education Longitudinal Study of 1988 data sets. Results show that locus of control is significantly correlated with standardized test scores (r=0.29), as is self-esteem (r=0.16). Additionally, the two measures are highly correlated with each other (r=0.58). These findings suggest that the constructs need better operational definitions, perhaps definitions that are more situation specific. Research findings suggest that the relationship between self-esteem and student achievement is more complex than it first appears. Self-esteem is significantly related to socioeconomic status, gender, and locus of control, variables that must be taken into account before the effects of self-esteem on achievement can be assessed. (Contains 4 tables and 12 references.) (Author/SLD)

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Self-Esteem, Locus of Control, and Student Achievement

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Presented at the Annual Meeting of the MidSouth Educational Research Association,
Tuscaloosa, Alabama 1996

TM026386

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Abstract

Sterbin, A. & Rakow, E. (1996). Self-Esteem, locus of control, and student achievement

This examination of the direct effects of locus of control and self-esteem on standardized test scores. The relationships among the standardized test scores and measures of locus of control and self-esteem for 12,260 students in the NELS 1994 database. The definition of Locus of control and self concept (self esteem) was the same as used in the 1972 NLS, High School and Beyond, and the 1988/1990 NELS data sets. The results show that locus of control was significantly correlated with standardized test scores (r=.29), as was self esteem (r=.16). Additionally, the two measures were highly correlated with each other (r=.58). These findings suggest that the latter two constructs need better operational definitions, perhaps definitions that are more situation specific.

In the past several years, schools and the educational process have been the subject of much media attention. Media stories abound of educational deficiencies and falling test scores. These stories have one common theme. Society recognizes standardized achievement test scores as a means of evaluating the success or failure of educational efforts. Given that society and funding agencies will probably continue to use standardized tests in evaluating the educational system, the question for educators is: How can we raise student achievement test scores?

I. Literature Review

Two concepts which have been shown to affect student performance are locus of control, and self-esteem.

Locus of control has been associated with student performance

Rotter (1954) proposed the locus of control construct, and defined it as a person's belief in the amount of control a person has on specific events in life. An internal locus of control refers to a belief - or expectancy - that one's behavior or stable personal characteristic will control specific events or outcomes. An external locus of control refers to a belief - or expectancy- that events or outcomes are controlled by forces external to oneself (e.g. luck, fate, etc.). A number of educational researchers have operationalized the locus of control construct in a number of different ways, and examined it's impact on student achievement. Wilhite (1990) found that an internal locus of control was a significant predictor of final course grades. Platt & Eisenmann (1968) found that subjects with an internal locus of control were more likely to persist longer at specific tasks and set higher goals. Walden & Ramey (1983) found that belief in personal control over academic success was a good predictor of achievement. These studies all found positive effects for an internal locus of control.

While these above cited studies found an internal locus of control to be positively associated with various definitions of student performance, other studies found no effects at all. Rita (1980) found no significant difference in locus of control for high achieving and low achieving college students. McClelland (1991) examined high and low achieving gifted students, but found no difference in locus of control between the two groups. Lopez (1990) studied locus of control among Hispanic subjects and varied the amount of control subjects had over their learning material. Lopez found that Hispanic learners with a high internal locus of control did not perform any better than learners with an external locus of control, even when given a high degree of control over computer aided instruction.

Student self esteem has also been associated with student achievement.

Self-esteem is also thought to increase student achievement test scores. The linkage between self-esteem and student achievement is that students who are not confident in their academic abilities do poorly in academics because they have convinced themselves that they can't achieve very much academically. If students don't believe they can do well, those children don't study, don't persist at difficult tasks, and therefore don't do well in school. For example, Marsh, Byrne, & Shavelson (1988) found that math self concept is significantly related to math achievement, and that verbal self concept is significantly related to verbal achievement.

Research on self-esteem uses multiple definitions of self esteem as well as multiple definitions of student performance, thus affecting the size and direction of the effects on student performance. Hansford & Hattie (1982) solved this problem by condensing all definitions into a generic measure called "self." They conducted a meta-analysis of 128 studies of self measures and student performance. They found an "average" correlation between self and achievement of .21. with a range of -.77 to .96. Many factors impacted the range of correlations in the meta-analysis. The more significant modifiers of the relationship included SES, grade level, and the operationalization/reliability of the self and achievement measures.

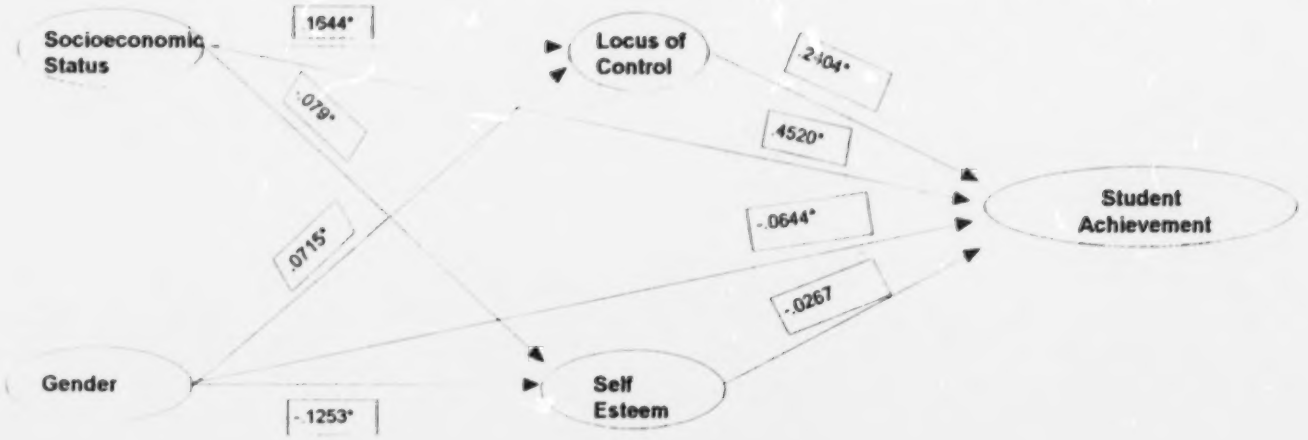
Both the locus of control and self esteem studies use a number of different definitions of achievement and self-esteem. Differing results are found depending on which definitions are used. For the purposes of this current study, standard definitions of these variables will be used.

Path Model

The research cited above suggests the following path model (Figure 1). Each student begins school with a specific gender and socio-economic status, and the variables are therefore treated as background variables in the path model. During a student's years in school, the student's locus of control and self-esteem have an opportunity to impact student achievement. For this reason, locus of control and self esteem are included in the model as moderating variables.

This path model will allow the direct, indirect, and total effects of socio-economic status, gender, self esteem, and locus of control to be examined individually, using standardized achievement test scores as the dependent variable. All possible paths between the variables are included in the model and are tested for significance. Other variables shown to moderate student achievement (e.g. reliability, grade level) have been either estimated or controlled via methodology.

Figure 1. Path Model



Effects on Student Achievement

Variable	Direct	Indirect	Total
SES	.4520*	.0374	.4895*
Gender	-.0644*	.0206	-.0439
LOC	.2404*	---	-.2404*
Self Esteem	-.0267	---	-.0267

II. Methodology

In 1988, over 21,000 students were randomly selected from schools across the United States to participate in the National Educational Longitudinal Study. Embedded in the student questionnaires was a battery of questions measuring the students' locus of control and self esteem. Also collected were the students' performance on standardized achievement tests. The locus of control measure used in the NELS dataset was not exactly Rotter's instrument, but a close approximation (see Table 1). The self esteem measure is a global measure of self esteem composed of 4 questionnaire items (see Table 1). Face validity is further enhanced in the NELS database by use of the same survey questions used in the High School and Beyond database, and in the National Longitudinal Study (NLS) - 1972.

Table 1 Survey Items used to compose psychological scales

Locus of Control
Good luck is more important than hard work for success
Every time I try to get ahead, something or somebody stops me
Planning only makes a person unhappy, since plans hardly ever work out anyway
Self-Esteem
I take a positive attitude toward myself
I feel I am a person of worth, on an equal plane with others
I am able to do things as well as most other people
On the whole, I am satisfied with myself

The full research sample of 21,188 high school students (twelfth grade students during the 1992 data collection phase) was selected for analysis. Many of the students did not answer all the items in both scales. Only those students with valid responses were included in the study. This resulted in a total sample size of 12,260 students for the analysis.

Student Achievement was defined by four standardized test scores. The four tests were in math, reading, social studies, and history / geography. Standardized tests scores were highly correlated with each other. These four measures of student achievement were combined into a single composite measure of student achievement (called achievement).

Hansford & Hattie (1982) found that the correlations between self and achievement were moderated by the reliability of the measures, grade level, and SES. In order to minimize the effects of unreliability, reliabilities were estimated for each of the three measures (see Table 2). Two of the reliabilities were within acceptable limits, and one was bordering on marginal. In order to control for the effects of grade level, all students selected for analysis were in the twelfth grade. Socioeconomic status was

measured using the SES definition provided by the NELS database and was included in the analysis as a background variable.

Table 2 Reliability Estimates for 3 scales

Measure	Reliability Estimate
Student Achievement	.9204
Locus of Control	.6763
Self Esteem	.8259

III. Results

Due to the large N size of this study, a significance level of .0001 was chosen for hypothesis testing purposes.

Locus of control is significantly related to student achievement even when all other variables in the model were accounted for. This means that students with a higher internal locus of control also achieve higher scores on standardized tests. (See Tables 3 and 4). The direct effect in the path model is .2404.

Self esteem is not significantly related to student achievement when all other variables in the model are controlled. This indicates that the global self esteem of students does not significantly impact student achievement once all other variables in the model are taken into account. The direct effect in the path model is -.0267.

Gender is significantly related to student achievement. This indicates that males tend to score higher on student achievement tests than do females (males are coded "1" and females are coded "2"), even when all other variables in the model are controlled for. Gender also had significant indirect effects. The model posits two paths through which gender could exert indirect effects on student achievement. The first path is through the self esteem variable, and the second is through the locus of control variable. Since the path from self esteem to student achievement is non significant, the indirect effects through this path cannot be interpreted. The indirect effects in the path model are .0206 ($p <= .0000$).

Socioeconomic status is significantly related to student achievement (B=.452038), even when all variables in the model are accounted for. This indicates that students with higher socioeconomic status tend to score higher on standardized achievement tests. The model also posits two paths through which socioeconomic status can exert indirect effects on student achievement. The first path is through the locus of control variable. Both paths are significant, and can be interpreted. The second path is through self esteem. Since the path from self esteem to student achievement is non significant, the indirect

effects through this path cannot be interpreted. The total effects in this path model are .4520 (P<= .0000).

Table 3. Zero Order Correlation Matrix of all variables in the path model

	Locus of Control	Self-Esteem	Gender	SES	Student Achievement
Locus of Control	1.0000				
Self-Esteem	.5767	1.0000			
Gender	.0666	-.1277	1.0000		
SES	.1623	.0828	-.0303	1.0000	
Student Ach	.2941	.1576	-.0587	.4908	1.0000

Table 4. Final Multiple Regression Results

Variable	B (Std Coeff)	T-value	p level
Gender	-.0644270	-8.2801	.00000
SES	.4520378	58.679	.00000
Self Esteem	-.0267120	-2.8130	.00491
Locus of Control	.2404299	25.2040	.00000
R square= .29214 (p <.00000)			

IV. Discussion

The zero order correlation between global self esteem and student achievement is moderate, and significant (r=.1576). Teachers and others see this correlation in their classrooms every day, and become advocates for self esteem programs in schools. This phenomenon contributes to the popularity of self esteem programs seen in many schools throughout the country.

The research findings in this study show that although there is a significant zero order correlation between self esteem and student achievement, the relationship is much more complex than it first appears. Self esteem is significantly related to socio-economic status, gender, and locus of control. These variables must be taken into account before the effects of self esteem on student achievement can be assessed. Unfortunately, multivariate relationships are difficult to assess in the classroom without the aid of structured research methods. This is especially true when teachers are busy teaching and only have time to conduct "guestimates" of the effects of self esteem. For this reason, administrators should insist on rigorous research on the effects of self esteem before purchasing self esteem programs.

The research picture is further complicated by use of multiple definitions of self esteem and student achievement. For the purposes of this study, a global definition of self esteem was used with a composite measure of student achievement. Perhaps significant results would be obtained if future studies used specific measures of self esteem (e.g. math self concept) with specific measures of student achievement (e.g. standardized math test scores). Previous research has found this to be the case (Marsh, Byrne, & Shavelson, 1988), but did not include all the variables found in the present path model.

Locus of control is significantly related to student achievement, even when all variables in the model are taken into account. This indicates that locus of control is a robust construct and should continue to be used as a moderator variable in studies of student achievement. One caveat should be mentioned here. Due to the large correlation between locus of control and self esteem (r=.5767) future research should determine if suppressor effects are artificially reducing the effects of self esteem. Perhaps specific definitions of both variables will not be so highly correlated and suppressor effects won't be an issue for interpretation.

The last issue raised by this research relates to directionality of the effects for locus of control and self esteem. It is reasonable to theorize that higher self esteem "causes" increases in standardized test scores, but it is also reasonable to theorize that higher test scores "cause" higher self esteem. Both directions have intuitive appeal. In fact, this relationship could flow in either direction, or in both directions at the same time. Future research should examine this issue as well.

References

Biehler, R., and Snowman, J. (1993). Psychology applied to teaching (7th ed.). Boston: Houghton Mifflin.

Burnett, J. W., et. al. (1995). Gender roles and self esteem: a consideration of environmental factors. Journal of Counseling and Development. 73(3) p.323-26.

Cheng, H.P.& Page, R.C. (1989). The relationships among sex, academic performance, anxiety, and self esteem of junior high school students in Taiwan. Journal of Multicultural Counseling and Development. 17(3) p.123-33.

Hembree, R. (1988). Correlates, causes, effects, and treatment of test anxiety. Review of Educational Research. 58(1) p.47-77.

Lopez, C. & Sullivan, H. (1990). Locus of control and learner control of CAI. Paper presented at the annual meeting of the American Educational Research Association, Boston, Mass.

McClelland, R. (1991). Locus of control in underachieving and achieving gifted students. Journal for the Education of the Gifted. 14(4) p.380-392.

Platt, J. and Eisenman, R. (1968) Internal - external control of reinforcement, time perspective, adjustment, and anxiety. Journal of General Psychology, 79, 121-128.

Rita, E.S. (1980). Locus of control and its antecedent correlates among hi-ach and lo-ach college discovery students. (EDRS No. 216718).

Rotter. J.B. (1954). Social learning and clinical psychology. Englewood Cliffs, N.J.: Prentice-Hall.

Stipek, D. J. (1993). Motivation to learn: from theory to practice. Boston: Allyn and Bacon.

Walden, T.A. & Ramey, C.T. (1983). Locus of control and academic achievement: results from a preschool intervention program. Journal of Educational Psychology, 75(3). p.347-58.

Wilhite, S. C. (1990). Self-Efficacy, locus of control, self-assessment of memory ability, and study activities as predictors of college course achievement. Journal of Educational Psychology 82 (4), 696-700.